

A1 configuration results in a base layer with more resistance which, in turn, reduces the output power of the device.

IN THE CLAIMS:

Please cancel claims 6 and 7. Please amend claims 1, 3, 5, and 10 as follows:

A2
1. (Amended) A heterojunction bipolar transistor (HBT) comprising:
a substrate;
an n+ doped GaN subcollector layer;
an n- doped GaN collector layer;
a p+ doped base layer formed on top of said collector layer defining a base collector interface formed from alternating layers of AlGaIn/GaN forming a superlattice;
an n+ doped AlGaIn emitter layer formed on top of said base layer defining an emitter base interface;
a base contact formed on said base layer;
a collector contact formed on said subcollector; and
an emitter contact formed on said emitter

A3
3. (Amended) A heterojunction bipolar transistor (HBT) comprising:
a substrate;
an n+ doped GaN subcollector layer;
an n- doped GaN collector layer;
a p+ doped base layer formed on top of said collector layer defining a base collector interface formed from alternating layers of AlGaIn/GaN forming a superlattice;

an n+ doped AlGaIn emitter layer formed on top of said base layer defining an emitter base interface, the Al concentration at said emitter base interface being greater at said emitter base interface than said base collector interface;

A3 a base contact formed on said base layer;

a collector contact formed on said subcollector; and

an emitter contact formed on said emitter.

5. (Amended) A heterojunction bipolar transistor (HBT) comprising:

a substrate formed from a material selected from the group consisting of sapphire and silicon carbide;

an n+ doped GaN subcollector layer;

an n- doped GaN collector layer;

A4 a p+ doped base layer formed on top of said collector layer defining a base collector interface formed from alternating layers of AlGaIn/GaN forming a superlattice;

an n+ doped AlGaIn emitter layer formed on top of said base layer defining an emitter base interface;

a base contact formed on said base layer;

a collector contact formed on said subcollector; and

an emitter contact formed on said emitter.

10. (Amended) The process as recited in claim 9, wherein step (c) comprises
X5 forming said base layer with an Al concentration at said base collector interface being less than the Al concentration at said base emitter interface.
